



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **HLTCA401D Perform electrocardiography (ECG)**

**Release: 1**

## HLTCA401D Perform electrocardiography (ECG)

### Modification History

HLT07 Version 4	HLT07 Version 5	Comments
HLTCA401C Perform electrocardiography (ECG)	HLTPAT401D - Perform electrocardiography (ECG)	Unit updated in V5. ISC upgrade changes to remove references to old OHS legislation and replace with references to new WHS legislation. No change to competency outcome.

### Unit Descriptor

#### Descriptor

This unit of competency describes the skills and knowledge required to use an electrocardiograph (ECG) machine and to provide a client's ECG trace

### Application of the Unit

#### Application

Work will be performed within a prescribed range of functions involving routine and non-routine methods and procedures which require the exercise of some discretion and judgement

All procedures are carried out in accordance with organisation policies and procedures, occupational health and safety policies and procedures, current infection control guidelines and Australian and New Zealand Standards for maintaining infection control

All tasks are carried out in accordance with State or Territory legislative requirements

### Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

Not Applicable

## Employability Skills Information

**Employability Skills**                      This unit contains Employability Skills

## Elements and Performance Criteria Pre-Content

Elements define the essential outcomes of a unit of competency.

The Performance Criteria specify the level of performance required to demonstrate achievement of the Element.

## Elements and Performance Criteria

### ELEMENT

1. Prepare electrocardiography machine for use

### PERFORMANCE CRITERIA

- 1.1     *Check ECG machine* is in good working order
- 1.2     Store ECG leads in accordance with the manufacturer's specifications

**ELEMENT****PERFORMANCE CRITERIA****2. Prepare client for ECG procedure**

- 2.1 Receive and process the *request* for an ECG in accordance with organisation policy and procedures
- 2.2 Identify the client correctly following the organisation's guidelines for preventing client misidentification
- 2.3 Reassure and provide complete information regarding the ECG procedure appropriately
- 2.4 Involve the client fully in discussions about their treatment using language they can understand
- 2.5 Provide the client with the opportunity to ask questions and discuss areas of concern
- 2.6 Record *client information*
- 2.7 Review client medical history and address pre-existing conditions
- 2.8 Obtain and document consent following ethical and legal requirements

**3. Attach ECG electrodes**

- 3.1 Maintain the client's privacy and dignity throughout procedure
- 3.2 Complete preparation of client's skin for electrode placement as required
- 3.3 *Position the client* correctly and comfortably and place electrodes in accordance with client's needs and current standards
- 3.4 Attach leads correctly and double check lead placement
- 3.5 Advise supervisor or an appropriate person if you think a client may be at risk

**ELEMENT****PERFORMANCE CRITERIA**

## 4. Produce an ECG trace

- 4.1 *Produce trace* and check for interference, wandering baseline and amplitude
- 4.2 Repeat trace if *interference*, increased amplitude or wandering baseline is identified
- 4.3 Identify and action abnormal ECG patterns which require immediate medical attention
- 4.4 Forward trace to cardiologist or requesting medical officer for reading
- 4.5 Record test details according to department and organisation procedures

## 5. Complete ECG process

- 5.1 Remove ECG leads and electrodes from client
- 5.2 Provide client with assistance as required, on completion of procedure
- 5.3 Clean ECG leads and electrodes on completion of procedure in accordance with infection control guidelines
- 5.4 Dispose of disposable ECG electrodes and other materials in accordance with waste management procedures
- 5.5 Store ECG machine accordance with manufacturer's specifications and WHS policies and procedures

**Required Skills and Knowledge**

This describes the essential skills and knowledge and their level required for this unit.

*Essential knowledge:*

The candidate must be able to demonstrate essential knowledge required to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes knowledge of:

- Anatomy and physiology relevant for performance of an ECG Normal, ECG rhythms and abnormal ECG activity

- Appropriate practices to ensure efficient use of power and other resources
- Causes of common trace interference and the appropriate remedies
- Confidentiality and privacy requirements of client information
- Electrical safety requirements
- Principles of function, usage, indications, limitations and care of equipment relevant for performance of an ECG
- Routine maintenance policy and procedures

*Essential skills:*

It is critical that the candidate demonstrate the ability to:

- Communicate effectively with clients in relation to the procedure and manage clients' anxiety level
- Comply with organisation policies and procedures including those of WHS and infection control
- Demonstrate all steps that must be taken to ensure equipment is safe for use
- Identify and manage all forms of interference with trace
- Identify the equipment requirements for performance of an ECG
- Prepare different types of equipment for the performance of an ECG
- Produce a good client ECG trace
- Recognise boundaries of responsibilities and refer problems to supervisor or other appropriate health professional

*continued ...*

*Essential skills (contd):*

In addition, the candidate must be able to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes the ability to:

- Communicate with people from diverse cultural and linguistic backgrounds
  - Correctly operate an ECG machine
  - Correctly prepare skin and place electrodes
  - Deal with conflict
  - Identify an ECG trace that is unsatisfactory for diagnostic purposes
  - Manage the known common interferences in the production of an ECG trace
  - Prepare and use equipment for performance of ECG
  - Produce an ECG trace satisfactory for diagnostic purposes
  - Recognise life threatening cardiac rhythm abnormalities
  - Solve problems Problem including an ability to use available resources
  - Use effective verbal and non verbal communication skills with a range of internal and external persons
- Organisation may require competence in English or a community language, depending

on client group

- Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues
- Use numeracy skills ranging from the ability to complete basic arithmetic calculations, recording stock levels and statistical information
- Use oral communication skills required to fulfil job roles in a safe manner and as specified by the organisation, including skills in asking questions, providing clear information, listening to and understanding workplace instructions, and clarifying workplace instructions when necessary
- Use reading and writing skills required to fulfil job roles in a safe manner and as specified by the organisation  
The level of skill required involves reading and documenting clinical information and understanding policy and procedure manuals
- Work with others and display empathy with client and relatives

## Evidence Guide

### EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

*Critical aspects for assessment and evidence required to demonstrate this competency unit:*

- The individual being assessed must provide evidence of specified essential knowledge as well as skills
- Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible
- Consistency of performance should be demonstrated over the required range of workplace situations

## EVIDENCE GUIDE

- Access and equity considerations:*
- All workers in the health industry should be aware of access and equity issues in relation to their own area of work
  - All workers should develop their ability to work in a culturally diverse environment
  - In recognition of particular health issues facing Aboriginal and Torres Strait Islander communities, workers should be aware of cultural, historical and current issues impacting on health of Aboriginal and Torres Strait Islander people
  - Assessors and trainers must take into account relevant access and equity issues, in particular relating to factors impacting on health of Aboriginal and/or Torres Strait Islander clients and communities

*Context of and specific resources for assessment:* Relevant organisation policy, guidelines, procedures and protocols



## EVIDENCE GUIDE

### *Method of assessment*

- Clinical skills involving direct client care are to be assessed initially in a simulated clinical setting (laboratory). If successful, a second assessment is to be conducted during workplace application under direct supervision
- Observation of work activities when performing an electrocardiography (ECG)
- Observation of simulation and/or role play when performing an electrocardiography (ECG)
- Discussion of physical and/or behavioural contingency scenarios involving duty of care
- Authenticated transcripts of relevant education/training courses
- Recognition of relevant life/work experience
- Written assessments/projects, questioning, e-learning can be used to assess knowledge
- Authenticated reports of experience in performing an electrocardiography (ECG) (documentation associated with performance reviews, supervisor/coordinator evaluations of work performance)
- Training records associated with performing an electrocardiography (ECG) first aid, occupational health and safety training, orientation/induction training, safe manual handling, universal infection control procedures
- Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice

### *Related units:*

- This unit can be assessed independently; however holistic assessment practice with other health services units of competency is encouraged

## Range Statement

### RANGE STATEMENT

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

*ECG machines may include:*

- Manual
- Automatic

*Checking of equipment must include:*

- Cleanliness
- Battery is fully charged
- Calibration
- Settings i.e. 12 lead ECG with lead 2 rhythm included
- Stock
- Maintenance in accordance with relevant Australian Standards

*Request may come from:*

- Registered medical practitioner
- Registered nurse

*Client information may include:*

- Name
- Medical record number
- Date and time
- Client symptoms
- Client medications
- Previous history of cardiac disease

*Client positioning may be influenced by:*

- Physical limitations i.e. amputees, burns
- Respiratory function

**RANGE STATEMENT**

*Trace production must include:*

- Paediatric (newborns to 2 years) traces must include a second tracing with V3R electrode

*Sources of interference may include:*

- Electrical
- Skeletal muscle tremor
- Excessive muscle activity
- Respirations
- Faulty leads

*Assistance for the client may include:*

- Cleaning of gel from chest and limbs
- Re-arranging clothing

**Unit Sector(s)**

Not Applicable